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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
|--|-------------|----------------------|---------------------------------|-----------------------------|
| 10/802,851   | 03/18/2004  | Shinsuke Toyomasu    | 250560US0                       | 5866                        |
| 22850  | 7590        | 01/11/2008           |                                 |                             |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | EXAMINER<br>MESH, GENNADIY      |                             |
|  |             |                      | ART UNIT<br>1796                | PAPER NUMBER                |
|  |             |                      | NOTIFICATION DATE<br>01/11/2008 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
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|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/802,851             |  | TOYOMASU ET AL.     |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Gennadiy Mesh          |  | 1796                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 7-12 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) 1, 2 and 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-4, 10-12 and 15-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Amendment***

Applicant's Amendment filed on November 6, 2007 is acknowledged.

Claims 1-4, 7-12 and 15-19 are pending. Claims 5-6 and 13-14 are canceled by Applicant.

Rejection is maintained as it was set forth in previous Office Action mailed on August 6, 2007, but altered due to amendment.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 3-4, 10-12 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoshi et al. (JP 05-117334) in view of Arakawa et al. (US 5,213,852) and in further view of information admitted by Applicant (see Specification, page 2, second paragraph).

Regarding Claims 3 and 4 Satoshi discloses identical basic copolymer as Component A (see Abstract, Formula (I) and (III), page 1) and teaches that this copolymer has excellent transparency, thermal resistant and surface hardness (see [0001] and [0019]). Satoshi further discloses that this copolymer as many others,

including styrenic polymers ( see [022-023]) could exhibit negative apparent (at stressed state) birefringence depending on , which was expected by theoretical calculation based on optical properties ( see paragraph [0026],page 3 and Example 2).

Same art also discloses that blend of two different polymers ( see paragraph [0022],page3) will exhibit intermediate resultant birefringence.

Note, that Satoshi point out that styrene contain polymers have negative birefringence, but silent about blending acrylonitrile-styrene copolymers with N-phenyl – substituted copolymer.

However, Arakawa discloses (abstract, lines 20-40,column 3) acrylonitrile-styrene basic copolymer, identical to Applicant's component B and teaches that this copolymer, has a **negative intrinsic birefringence** can be blend ( see line 5-20,column 9) with other polymers ( even with polymers having positive birefringence) in order to obtain oriented ( uniaxially stretched ) optical film **exhibiting negative birefringence and retardation** due to specific relation between refractive indexes.( see lines 45 –60,column 5).

Therefore , it would have been obvious to one of ordinary skill in the art at the time of the invention blend component A disclosed by Satoshi and component B per teaching of Arakawa, in order to obtain optical film exhibiting negative birefringence and having excellent thermal resistant and surface hardness (due to presence of component A in the composition).

Note, that Satoshi and /or Arakawa teach blending of Component A or Component B with other polymers if they produced transparent composition ( see Satoshi [0022] or

Arakawa column 9, lines 5-20), but are not specific about ratio between components a and B.

However, Applicant wrote - see page 2, second paragraph of the Specification " It is known that with respect to maleimide based copolymers, a copolymer comprising a phenylmaleimide residual group and an  $\alpha$ -olefin residual group exhibits **thermodynamic miscibility** within a specific proportion range in a blend with a copolymer comprising a styrene residual group and an acrylonitrile residual group (see, for example, U.S. Patent No. 4,605,700)".

Note, that according U.S. Patent No. 4,605,700 discloses that blend of N-aryl substituted maleimide/ $C_2 - C_4$   $\alpha$ -olefin copolymer, having average molecular weight from about  $5 \times 10^4$  to about  $5 \times 10^5$  ( Component A) and acrylonitrile-styrene copolymer or acrylonitrile- butadiene- styrene terpolymer, wherein acrylonitrile presented in a range from 15% to about 35% by weight, having average molecular weight from about  $7 \times 10^4$  to about  $1.5 \times 10^4$  ( Component B) produce thermodynamically stable( miscible) polymer composition in wide range : from about 99wt.% to 1 wt.% of Component A and from about 1wt.% to 99wt.% of Component B.

Therefore, one of ordinary skill in the art will be motivated to blend Components A and B due to miscibility in specific proportion in order to obtain composition with specific properties.

Regarding limitation of Claim 12 – see Satoshi [0040].

Regarding limitation of Claim 15: Copolymer disclosed by Satoshi et al.( JP 05-117334) satisfied limitation of “**consisting essentially of**” because copolymer can comprise only two components – same components as claimed by applicant – ( due to molar ratio( see claim 1 of Satoshi below) as 100/0 – presence of the component II is not a requirement) :

J-P-A-5-117334 (May 14, 1993)

[Claims]

1. A maleimide-based copolymer comprising at least one of N-phenyl substituted maleimide units represented by the following formula (I),

at least one of N-alkyl maleimide units represented by the following formula (II),

and ct-olefin units represented by the following formula (III),

wherein ((I)+(II)) is 30-98 mol%, (III) is 70-2 mol%,

(I)/(II) molar ratio is **100/0** to 1/99 .

***Response to Arguments***

2. Applicant's arguments related to Claims 3-4, 10 –12 and 15-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Satoshi et al.( JP 05-117334) in view of Arakawa et al.( US 5,213,852) and in further view of information admitted by Applicant ( see Specification, page 2,second paragraph) filed November 6, 2007 have been fully considered but they are moot in view of the new ground(s) of rejection.

3. ODP rejection is overcome by Amendment : chemical structure of Component A claimed by Applicant are different than chemical structure claimed in US Patent No. 7,001,967.

***Conclusion***

**THIS ACTION IS NOT MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gennadiy Mesh whose telephone number is (571) 272 2901. The examiner can normally be reached on 10 a.m - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272 1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gennadiy Mesh  
Examiner  
Art Unit 1796

GM

/Vasu Jagannathan/  
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